



PUBLICATIONS

Research Series • No. 1

CURRENT RESEARCH IN WORK FOR THE BLIND A SURVEY

by NATHANIEL J. RASKIN
and MARIAN F. WELLER

American Foundation for the Blind
15 West 16th Street, New York 11, N. Y.

HG
8811
R37



**M.C. MIGEL LIBRARY
AMERICAN PRINTING
HOUSE FOR THE BLIND**

CURRENT RESEARCH IN WORK FOR THE BLIND

A SURVEY

by NATHANIEL J. RASKIN
and MARIAN F. WELLER

No. 1
Research Series



PUBLICATIONS

American Foundation for the Blind
New York

PRICE 50 CENTS

Published October 1953 by the

AMERICAN FOUNDATION FOR THE BLIND

15 WEST 16TH STREET, NEW YORK 11, N. Y.

PRINTED IN THE U. S. A.

THE WILLIAM BYRD PRESS, INC.

Contents

	<i>Page</i>
I. BACKGROUND OF THE SURVEY	4
II. STUDIES IN ADJUSTMENT	5
III. STUDIES IN THE AREA OF INTELLIGENCE, ACHIEVEMENT, APTI- TITUDE AND TRADE TESTS	20
IV. STUDIES ON THE EDUCATION OF THE BLIND	22
V. VOCATIONAL EXPERIENCES OF BLIND PERSONS	25
VI. COST-OF-LIVING STUDY	27
VII. SAFETY OF THE BLIND	28
VIII. FACIAL VISION	29
IX. AREAS NOT BEING INVESTIGATED CURRENTLY	29
X. SUMMARY	31
XI. BIBLIOGRAPHY	32
XII. LIST OF INVESTIGATORS	34

1. Background of the Survey

During the months following the inauguration of the Department of Research Planning at the American Foundation for the Blind, a number of workers and researchers in the field requested information from the Department concerning completed research projects and research in progress throughout the country. Persons about to begin studies were interested in learning whether they were duplicating projects already completed or in the process of investigation, while other workers in the field were eager to learn of research that would have a bearing upon their particular area of interest in work with blind persons.

Some research studies in progress were known to this Department through its own Research Fellowship Program, and others came to our attention through the receipt of requests for information and through the generosity of persons in the field who were kind enough to inform us of studies about which they had learned.

Form letters stating the purpose of the survey and requesting information about the status of research in their areas, were sent to agencies and schools for the blind in the United States, Hawaii and Puerto Rico. At the same time, letters and research questionnaires were sent to persons who had published studies in the field since 1942 and to others who were known to us to be active, researchwise, in work for the blind asking if they were currently engaged in research. The letters to agencies, schools and individuals also requested the names and addresses of others who might presently be doing research.

It is our feeling that this small survey is only a starting point in the gathering of information on the subject of current research. Since we have only a partial list of the names of persons who are doing research in the field, we may have neglected researchers who are doing valuable work. Due to the nature of the project,

however, it was decided to make available, as quickly as possible, whatever information was gathered by the methods mentioned above, in the hope that the survey itself would serve as an invitation to persons engaged in research, or persons aware of research not included here, to send us information about those projects.

The survey presented here represents the cooperative efforts of many people. Busy administrators in agencies throughout the country, principals and superintendents of schools, and persons in all areas of work for the blind took time from their duties to let us know of their research activities. Without their cooperation, the survey would not have been possible.

The present survey does not include research of a technological (dealing with magnifiers, reading machines, etc.) or medical nature, as it was felt that other individuals would be better qualified to understand and to evaluate work in these areas.

An attempt will be made in this paper to define the trends revealed by the survey. Which topics are receiving the most attention in current research projects? How do current investigations relate to past research? What methods are being utilized in the investigation of these topics? What relationships exist among the various studies? What is the strength of current investigations in terms of the significance of the areas being studied and the research methodology being employed? It is to these questions that we will direct our attention in the sections which follow.

II. Studies in Adjustment

Even a casual survey of the current group of investigations reveals that the main interest by far is in the area of the personal adjustment of the blind. This interest takes many forms; the general area of adjustment is approached from many different angles. Table 1 gives an overview of the investigations in the area.

TABLE 1. CURRENT INVESTIGATIONS ON THE ADJUSTMENT OF THE BLIND

<i>General Area of Investigation</i>	<i>Specific Topic of Study</i>	<i>Population and Research Instruments Employed</i>	<i>Source of Support and Stage of Completion</i>	<i>Investigator and Affiliation</i>
Causal factors in the adjust- ment of the blind.	Differences be- tween well-ad- justed and mal- adjusted blind persons	<i>Population:</i> 150 well-adjusted, self-supporting blind individuals, 150 well-adjusted blind individuals not self-supporting. 150 poorly-adjusted blind individuals. <i>Instruments:</i> (1) Case records (2) Structured interview (3) Psychological Tests: Wechsler Verbal Scale Pennsylvania Bi-Manual Work- sample Bauman Emotional Factors Inventory Kuder Preference Record	Aided by the Maryland Workshop for the Blind and by the states of Delaware, New Jersey, North Carolina, Pennsylvania and Virginia. Records obtained for 442 persons. 87 tables drawn up from the structured interviews. Results of psychological testing tabulated. Scheduled to be completed in 1953.	Mrs. Mary K. Bauman, Personnel Research Center, Philadelphia, Pennsylvania
	The comparative effect on person- ality develop- ment of segre- gated and inte- grated types of educational programs.	<i>Population:</i> Students at the different grade or class levels in the following types of schools: 1a. Two residential schools for the blind. 1b. Students enrolled in braille classes of public schools in the same region as the two residential schools. 2a. Two Negro colleges or universities. 2b. Two general colleges or universities with a large number of Negro stu- dents in the same region as the Negro Colleges. 3a. Two women's colleges. 3b. Two coed colleges in the same region. <i>Instruments:</i> (1) The Bernreuter Personality Test (2) The Sanford F-Scale	American Foundation for the Blind Research Fellow- ship. To be completed during 1953.	Mr. Herbert Greenberg, Graduate Student, New York University, Consultant on the Blind, New York City Department of Welfare.

Causal factors in the adjustment of the blind.	Causes of anxiety in parents of preschool blind children.	<i>Population:</i> About 100 parents of preschool blind children in Southern California. <i>Instruments:</i> An interview questionnaire specifically designed for the study in which parents have to name the three most important reasons why they worry about their visually handicapped child and are then asked for additional reasons. In another part of the questionnaire, the visiting teacher is asked to give her opinion on the mode of parental adjustment, on the child's development, and also certain facts in connection with the parents' economic condition, education, and the child's degree of visual handicap.	State of California. Information now being collected. To be completed during the academic year 1953-54.	Dr. Berthold Lowenfeld, California School for the Blind, Berkeley, California State visiting teachers for blind preschool children in Southern California.
Assessment of the adjustment of the blind.	Comparison of self-concept of blind and sighted adolescents.	<i>Population:</i> 30-36 blind subjects aged 16-18 from three schools for the blind. An equal number of sighted subjects matched for age, intelligence and other factors. <i>Instruments:</i> (1) Two electrically recorded forty-five minute open interviews. (2) Modification of Stephenson Q-sort of self-descriptive statements, individually administered.	American Foundation for the Blind Research Fellowship. Subjects tested and interviewed at Overbrook and Perkins. To be completed in 1953.	Mr. Frederick Jervis, Department of Psychology, University of New Hampshire, Durham, New Hampshire
Assessment of the adjustment of the blind.	Investigation of social participation among blind adults. Comparison with group of sighted adults.	<i>Population:</i> 100 blind adults. 100 sighted adults. <i>Instrument:</i> Personal interviews with blind and sighted adults using revised Queen Schedule of Social Participation.	American Foundation for the Blind. Recently completed. The blind population was found to have a comparable volume of social participation, largely with other blind individuals.	Mr. Leonard Gravitz, Department of Sociology, Washington University, St. Louis, Missouri

TABLE 1. CURRENT INVESTIGATIONS ON THE ADJUSTMENT OF THE BLIND (Continued)

General Area of Investigation	Specific Topic of Study	Population and Research Instruments Employed	Source of Support and Stage of Completion	Investigator and Affiliation
∞	Assessment of the adjustment of the blind.	Psychological and social de- velopment of pre- school blind children. Establishment of more accurate norms. Better under- standing of factors involved in the total de- velopment of the hild.	The Chicago Community Trust, The Field Founda- tion, The Tibbetts Fund. The Project has been under way since August, 1949. Data which have been col- lected thus far are now in a stage of intensive evalua- tion looking towards early publication and more speci- fic formulation of investi- gative avenues which arise from the work already done.	Miss Miriam Norris, Medical Social Worker, Department of Medi- cine, University of Chicago Dr. Anna S. Elonen, Department of Psy- chology, University of Michigan Dr. Ward C. Halstead (Chief Administrative Officer of the Project), University of Chicago Other members of the staff of the University of Chicago Medical Clinics.
	Assessment of the adjustment of the blind.	<i>Population:</i> "Group A"—Preschool children from the Chicago area all of whom have been known to the research group before 15 months of age and for whom the project assumes case work responsibility. (55 in this group at time of report.) "Group B"—Children followed regularly by the psychologist but for whom the project does not assume case-work re- sponsibility. These children known to the project before 27 months of age. Some of them live outside of the Chicago area. (77 in this group at time of report.) "Group C"—A further group of children are being studied systematically but less intensively than groups A or B. Many of them live outside of the Chicago area. (179 in this group at time of report.) <i>Instruments:</i> Gesell, Cattell, and modification of the Maxfield-Fjeld scale. Interview forms for describing child's growth and family attitudes and relationships.	Data not yet analyzed. Ten-year longitudinal study planned.	Dr. Helton McAndrew, Durham, North Carolina

Other groups of children equated with the blind children, but otherwise not described.

Instruments:

Twitchell-Allen Tri-Dimensional Apperception Test.

Interviews and records to discover life experiences, educational achievement and vocational progress over a ten year period.

Assessment of the adjustment of the blind.	General follow-up study of blinded veterans of World War II and the Korean war.	<i>Population:</i> Approximately 2000 non-hospitalized blinded veterans of World War II and the Korean conflict. <i>Instrument:</i> A structured interview, employed by a social worker, covering general census data about the veteran, his disability, medical treatment and rehabilitation, use of prosthetics and travel aids, education and special training, work history, present occupational situation and adjustment and present personal and social adjustment, including recreational activities, attitudes toward others, attitudes toward the handicap, perception of the attitudes of others, degree of realism, and general state of happiness. Conclusions are derived both from answers to direct questions and from the social workers' judgements based on these responses and other interview behavior. Recommendations are made for any help the veteran seems to need, including appropriate V. A. referral by the social worker.	United States Veterans Administration. The information has been gathered, and is being analyzed currently.	Mr. Roger Cumming, Social Service Division Dr. A. B. C. Knudson and Mr. C. Warren Bledsoe, Physical Medicine Rehabilitation Division, Department of Medicine and Surgery, United States Veterans Administration, Washington, D.C.
--	---	--	--	---

TABLE 1. CURRENT INVESTIGATIONS ON THE ADJUSTMENT OF THE BLIND (Continued)

General Area of Investigation	Specific Topic of Study	Population and Research Instruments Employed	Source of Support and Stage of Completion	Investigator and Affiliation
Development of measures of adjustment.	Auditory Projective Technique	<i>Population:</i> Twenty male and twenty female sighted subjects, with a variety of emotional difficulties.	American Foundation for the Blind. The Institute of Living, Hartford, Connecticut Testing of 40 sighted subjects completed. Murray-need-press analysis completed by the investigator, for both TAT and APT data. During 1953, Kutash method of analysis to be completed by the investigator and by other psychologists, to assess reliability of findings.	Miss Sydell Braverman, Woodrow Wilson Rehabilitation Center, Fishersville, Virginia Mr. Hector Chevigny, New York, New York
		<i>Instrument:</i> Each subject given first the Thematic Apperception Test, then after an interval of 1-2 months, the Auditory Projective Test. The test consists of the following stimuli recorded on both sides of two 33 1/3 RPM 12-inch discs:		
		(a) 20 "sound riddles"—readings by one male voice which are descriptions of feelings and/or objects, but are ambiguous as to meaning.		
		(b) 7 conversations depicting various interpersonal relationships such as— young girl and older woman, young woman and older man, etc. These are recorded in a nonsense language which allows for the retention of emotional content but leaves word content ambiguous.		
		(c) 3 of the above 7 conversations recorded in English rather than nonsense language.		
		(d) 8 sound effects designed to portray a scene and a brief activity. Four of the conversation stimuli have different versions for men and women. Subjects are asked to make up a story in response to each stimulus.		

Development of measures of adjustment.	Auditory Apperception Test	<i>Population:</i> Unknown number of inmates of U. S. Disciplinary Barracks, Lumpoc, California. <i>Instruments:</i> 14 auditory stimuli recorded on two sides of a long-playing record, including music, abstract sounds (no conversation), about which the subject is asked to tell (or write) a story. Inquiry often follows test. Used here in association with psychiatric diagnosis, case histories, other psychological instruments. Practically any of the current TAT analysis systems may be used in study of AAT stories.	Completed and reported in Journal of Clinical Psychology, 1953, 9, 54-58.	Mr. Thomas S. Ball Mr. Louis C. Bernardoni, 1030 North 2nd Street, Phoenix, Arizona
Development of measures of adjustment.	Auditory Projective Technique	<i>Population:</i> About 500 subjects including tuberculosis patients, schizophrenics, chronically ill, convalescing children, residents of a home for the aged, college students, and blind children. <i>Instruments:</i> The Sound Association Technique consists of a series of 21 sound situations recorded on both sides of two 12-inch 78 RPM discs. Both interpersonal relationship situations and abstract sounds are employed. The subject is asked to respond to each stimulus with whatever comes to his mind.	Palo Alto Medical Foundation, Stanford University During 1953, a new population made up of blind adults and children of both sexes, and of various degrees of blindness, to be tested along with a rating scale and sentence completion test.	Mrs. May Husni Palacios, Stanford University and Dr. Harry Wilmer, Stanford University, Stanford University, California

TABLE 1. CURRENT INVESTIGATIONS ON THE ADJUSTMENT OF THE BLIND (Continued)

<i>General Area of Investigation</i>	<i>Specific Topic of Study</i>	<i>Population and Research Instruments Employed</i>	<i>Source of Support and Stage of Completion</i>	<i>Investigator and Affiliation</i>
Development of measures of adjustment	The development of attitude and rating scales to measure the progress in the adjustment of rehabilitation center clients.	<i>Population:</i> 155 clients in 8 rehabilitation centers, each in a different state.	Office of Vocational Re- habilitation, Department of Health, Education and Welfare. American Foundation for the Blind Research Fellow- ship. To be reported in 1953.	Mr. Edward Fitting, Graduate Student, Michigan State Col- lege. Division of Services for the Blind State of Michigan
		<i>Instruments:</i> (1) 42-item attitude scale completed by the blind client, developed as part of the study, including items on level of morale, outlook on blindness, out- look toward sighted, family rela- tionship, outlook toward training, occupational outlook. (2) A rating scale filled out by rehabili- tation center personnel providing for two areas: (1) functional skills and (2) general adjustment. The first section includes six ratings in the following areas: a) indoor orien- tation; b) travel ability; c) ability to manage eating problems; d) ability to manage dressing problems; e) ability to manage personal hygiene problems; and f) ability to manage problems of social relations. The second part of the rating scale is on general adjustment and includes the six areas in which measurement is obtained and, thus, provides an external criterion to permit valida- tion.		

Development of measures of adjustment	Revision of social maturity scale for use with blind children of preschool age.	<i>Population:</i> Blind preschool children seen at the Psychological Guidance Service of the New York Association for the Blind and at the Perkins Institution. <i>Instrument:</i> The Maxfield-Fjeld Adaptation of the Vineland Social Maturity Scale. On the basis of the data collected, some items will be deleted from the scale as being useless or unnecessary for the measurement of the social maturity of blind children and others will be as- signed revised maturity levels. A manual is also being prepared for use with the adapted scale.	American Foundation for the Blind. To be completed in 1954.	Dr. Kathryn E. Maxfield, College of the City of New York
---	---	--	---	---

TABLE 1. CURRENT INVESTIGATIONS ON THE ADJUSTMENT OF THE BLIND (Continued)

General Area of Investigation	Specific Topic of Study	Population and Research Instruments Employed	Source of Support and Stage of Completion	Investigator and Affiliation
Development of measures of adjustment.	Adaptations of the Duss Fables Test and the City College Guess Why Game	<i>Population:</i> 18 visually handicapped children be- tween 4 and 16 years of age with I.Q.'s ranging from 64 to 133 (Fables Test) Approximately 50 children (Guess Why Game) <i>Instruments:</i> Adaptation of Fables Test consists of 10 fables designed to explore areas such as psycho-sexual development, dependency- independency feelings, feelings regarding parents and siblings, and fear reactions. An example is the Bird Fable: "A Daddy and Mommy bird, and their little birdie, are asleep in the nest on a branch. But all of a sudden a big wind blows; it shakes the tree and the nest falls on the ground. The three birds awaken all of a sudden. The Daddy flies quickly to a pine tree, the mother to another pine tree. What is the little bird going to do? He knows how to fly a little already." <i>Guess Why Adaptation:</i> Consists of 57 items designed to uncover problems, fears, wishes. The child is told "I know a boy named Robert, and I want to see if you can guess what kind of boy he is and why he acts the way he does. (Appropriate modifications are made when the subject is a girl.) Tell me the first thing that you think of. For example:	Analysis of Fables Test completed. Results of the Guess Why Game have not been reported, but the investi- gator's judgement based on its preliminary use is that it is the more fruitful tech- nique for further study, as it appears to provide a sig- nificant understanding of the child's feelings about himself and those around him.	Miss Eunice L. Kenyon, Boston Nursery for Blind Babies

- 1) Robert doesn't have time to listen to the radio. Why?
- 2) Robert came home crying the other day. Why?
- 3) One day Robert and his mother had a big argument. Why?
- 4) Robert thinks someone in school is very nice. Why?
- 5) If Robert were rich, what would he do that he can't do now?
- 6) Do you like Robert? Do you think he's nice?"

Treatment procedures	Psychological problems associated with blindness in young children	<i>Population:</i> Ten preschool blind children referred for psychological help. Five mothers of these children. <i>Instruments:</i> Analysis of electrically recorded interviews obtained with both children and mothers. The children had ten individual play therapy sessions and the mothers ten group therapy sessions.	Teachers College, Columbia University American Foundation for the Blind Research Fellowship Therapy completed. Report to be published in 1953 or 1954.	Dr. Virginia Axline, Teachers College, Columbia University
----------------------	--	---	--	--

TABLE 1. CURRENT INVESTIGATIONS ON THE ADJUSTMENT OF THE BLIND (Continued)

General Area of Investigation	Specific Topic of Study	Population and Research Instruments Employed	Source of Support and Stage of Completion	Investigator and Affiliation
Treatment procedures	An experimental attempt to in- crease independ- ent behavior in blind children by modifying parental atti- tudes.	<i>Population:</i> Approximately 50 blind preschool chil- ren in the Twin Cities area. <i>Instruments:</i> <i>To measure attitudes and practices of mothers:</i> semi-structured interviews, con- trolled observation of mother's behavior when her child is placed in structured experimental situations requiring inde- pendent action, locally developed ques- tionnaire assessing the child's behavior and parental provisions for independence and self-help. <i>To measure child's dependent-independent behavior:</i> Maxfield-Fjeld adaptation of Vineland Social Maturity Scale, con- trolled observation of child's behavior in standard home situations both with and without the mother's presence. Fol- lowing the initial measurement of mothers and children, the children will be divided into three groups of approxi- mately 15 each. Mothers of children in the two experimental groups will be ex- posed to parental education programs in the following manner: (1) Will receive individual weekly visits from one mem- ber of the research team. (2) Will attend weekly meetings of 5-10 mothers to hear discussions by professionally trained workers or to participate in group dis- cussion moderated by a member of the	United States Public Health Service Institute of Neuro- logical Diseases and Blind- ness and Services for the Blind, Department of Public Welfare, State of Minnesota Original assessments now being made. Experimental training program to begin in October, 1953.	Dr. Emily Willerman, Services for the Blind, Department of Social Welfare, State of Minnesota

research team. (3) Control group with which there will be no contact during the experimental period of six months. Both experimental and control groups will be reassessed at the end of the training period, using the same techniques and instruments described above. Follow-up of the subjects after 12 and 18 months is planned.

Treatment procedures	Measurement of progress of blind clients receiving at training at rehabilitation centers.	<i>Population:</i> Classes going through the North Carolina Rehabilitation Center for the Blind. <i>Instruments:</i> (1) Psychological Tests (a) Verbal Scale of the Wechsler Bellevue Test of Intelligence (b) Bauman Emotional Factors Inventory (c) Personal Audit (d) Bernreuter Test (e) Minnesota Multiphasic Personality Inventory (f) Kuder Preference Test (g) Pennsylvania Bi-Manual Work Sample (h) Purdue Pegboard (i) Minnesota Turning and Placing (2) Check list of tasks accomplished (3) Drama techniques (exploratory)	North Carolina State Commission for the Blind. Office of Vocational Rehabilitation, Department of Health, Education and Welfare In progress.	Mr. William M. Cannon, North Carolina State Commission for the Blind
----------------------	---	--	--	---

It is apparent from Table 1 that a great deal of objective evidence is being marshaled to answer long-standing questions concerning the adjustment of blind individuals.

What can be said about the current group of investigations compared with the studies of the past in this area? There is first of all a difference in emphasis regarding the purpose of the research. In the past, two major questions have been primary: (1) How well adjusted are the blind? and (2) How does the adjustment of the blind compare with that of sighted people? The current studies reveal a distinct shift toward a more functional emphasis, so that many of the investigations are concerned with the factors that underlie adjustment and with the effectiveness of procedures designed to improve the adjustment of blind persons. Problems like "Are the blind less well-adjusted than the sighted?", which have questionable usefulness, seem to be giving way to issues such as "What makes a blind person maladjusted?" and "What are the effective ways of improving adjustment?", which have greater significance both practically and theoretically.

Secondly, the current studies are characterized by the employment of more advanced instruments for measuring personal adjustment. In the survey by Barker, Meyerson and others (1), 16 studies based on paper-and-pencil personality inventories are described and only five based on interview methods. As a result, while these studies generally conclude that there is a greater incidence of maladjustment among blind people, the results are inconclusive partly because of the deficiencies of the tests.

In the current group of investigations, there is not a single one which relies solely on the inventory-type of test in this field, but instead there is a noticeable development in the widespread use of projective tests of personality which aim at a deeper understanding of adjustment patterns. Indeed, several of the research projects center around the creation of such instruments, and in this way, the field of research on the blind may well make contributions to the general field of personality investigation.* Together

* In addition to the work on the tests which are described in this paper, Stone (19) has developed the Auditory Apperception Test, which may be used with blind people. Gilmore (7), Lax (12) and Biggs (2) have recently presented findings obtained with blind children, the first two having devised their own auditory

with these advances in methods of investigation, the concepts being studied show more interest in the total adjustment of the person and in central variables of personality organization such as the concept of self and a lessening of attention to such concepts as neuroticism and introversion-extroversion, which are more traditional and tend to describe rather than explain. The investigations of programs of treatment, in the projects of Norris, Fitting, Axline, Willerman and Cannon, reflect a fresh new emphasis in the field. Also striking is the impact of the preschool blind population, which has grown concurrently with the incidence of retrolental fibroplasia. The projects involving these children and their parents promise to add significantly to knowledge about the origin of maladjustment among the blind, especially those deprived of sight in infancy.

Closely related to this fact is the emergence of a group of longitudinal studies, (Norris, McAndrew, Fitting, Willerman, Cannon) in which blind subjects are being followed over periods of months and even years, rather than being subjected to a "one-shot" examination.

It should be pointed out that a noticeable exception to the trends which have been described here is the study of Sommers (18) which, although done earlier, continues to stand up as the outstanding study in the field of research on the adjustment of blind persons, by virtue of the meaningfulness of the concepts studied, the instruments used together with the careful objective way in which they were employed, the interest in development and causation, the number of subjects studied and the objective attitude of the investigator towards her own study. It is a good example of a project in which objective procedures were used in a way which did not interfere with subjective understanding, but rather as a means of strengthening the findings.

stimuli and Biggs having applied the Twitchell-Allen Tri-Dimensional Test to a group of blind children. These three studies are all exploratory in nature and show mainly that these projective techniques are capable of evoking responses on the part of blind elementary school age children which can be subjected to the usual type of psychological analysis. A similar conclusion has been drawn by Harris (8) with regard to the applicability of his bas relief projective technique to blind adults. Sargent (16) has initiated a project which will further explore the use of her Insight Test with blind subjects.

III. Studies in the Area of Intelligence, Achievement, Aptitude and Trade Tests

In the section on adjustment above, it was seen that a great deal of interest is being shown in developing new and more effective tests of personality. There are comparatively few investigations as regards other types of tests.

One of the most interesting of these is the program of trade tests for blind workers being developed by the United States Civil Service Commission. The aim of this project has been to develop tests for the blind which would be of "practical equivalence" to tests for the sighted. The tests are for elements that make up a job, such as gross hand dexterity, fine finger dexterity, pattern matching, following oral directions, mechanical information, etc. An example of how a test for sighted people has been modified for blind subjects is given in this description of the pattern-matching test:

"For the pattern-matching test, which is given to sighted persons in pictures, the test for the blind consists of plastic pieces which are to be felt by an examinee. The difficulty level of each question with the plastic pieces has been gauged to the difficulty of the regular test questions. Special adaptations had to be made. For example, in the regular test, each question shows four patterns, and the examinee chooses the pattern that can be made from a particular set of pieces. Each question shows completely different patterns. The fact that the patterns differ from question to question causes no difficulty to sighted competitors. With the blind, in order not to introduce a difficulty that is not present for the seeing, the same basic patterns are used for each question."

Validation studies are being planned by giving the test to employed blind persons and comparing results with their production efficiency. At present, the hypothesis is being used that success has been achieved in equating the test for the blind if the highest scoring blind person, using the blind test, gets practically the same score as the highest scoring seeing person using the regular test for the sighted.

In the area of intelligence testing, Dr. Samuel Hayes is con-

tinuing his research and has extended his norms for the Interim Hayes-Binet test in two ways: (1) by securing a large amount of data from schools for the blind other than Perkins Institution and (2) by securing enough results for young blind children to form a basis for the lower end of the scale. He is working on item analysis by percent passing at each age and hopes to complete the standardization and prepare a Guide in 1953. This Guide may also include a chapter on the Wechsler Tests, on which a great deal of data have been obtained, especially the Wechsler Form I of the scale. He has collected comparatively few results on the children's Wechsler.

Dr. T. Ernest Newland of the University of Illinois, believing that current methods of measuring the learning aptitude of blind children do not include enough test items of a cutaneous-kinaesthetic type, is trying out about 90 items graded in difficulty, to cover the age range of school children in continuous fashion. These items have been printed in raised form by the American Printing House for the Blind, and the collection of standardization data is to begin shortly. It is hoped that such a test will provide an index of braille-learning ability. If the exploratory project is successful, the standardization of a test composed of these items would later be undertaken.

In the field of achievement testing, Dr. Hayes is planning a critical study of the use of the Stanford and Metropolitan Achievement tests. He is comparing tables of results which he has made through the use of these tests at Perkins Institution with results obtained in other schools. A new grade 2 braille adaptation of the Stanford, which was arranged by Dr. Hayes, is being distributed by the American Printing House for the Blind.

Mr. Carl J. Davis of Perkins Institution is initiating a validation study of the braille-talking book adaptation of the Scholastic Aptitude Test of the College Entrance Examination Board. His population will consist of all individuals who have taken this test and for whom high school and college records are available, and he will correlate the academic results with the test findings.

In evaluating the work in this area, it should be noted that research on tests for preschool children was covered in the previous

section. Also, included in some of the adjustment studies are data based on the use of the Wechsler, Hayes-Binet and other tests in this area. The overall judgment may be made, however, that changes in this field of testing are not occurring as rapidly as in the area of personality organization and adjustment, and that the general situation remains much as described in *A Manual for the Psychological Examination of the Adult Blind*, published by the Psychological Corporation in 1951 as a project of the National Psychological Research Council for the Blind and in the book *Psychological Diagnosis and Counseling of the Adult Blind*, published by the American Foundation for the Blind in 1950. Newland's project appears to be in the same direction as the attempts to adapt the Raven Progressive Matrices test items originated in England (although Newland points out that he is employing a greater variety of items and does not call on the child's ability to respond to or with Braille), the performance tests included in Hayes 1930 revision of the Binet, a series of design items utilizing magnetic bars on a metal plate explored by Hayes, and the Non-Language Learning Test of Bauman. It is hoped that out of these leads will come a satisfactory way of measuring the intelligence of blind persons on the basis of non-verbal factors. It is noteworthy, too, that psychologists and psychometrists working independently at various schools and adjustment centers for the blind, have devised their own tests for measuring various types of manual and mechanical aptitudes and skills. Increased communication between these centers might lead to a coordination of effort and a contributions to psychological measurement in this area.

iv. Studies on the Education of the Blind

Our survey disclosed only a meager amount of research going on in this area. It consists of four scattered studies.

Dr. Charles Buell (3) of the California School for the Blind has recently completed a survey of how blind high school youth are being educated. It shows that most blind high school children continue to attend residential schools, that a small percentage

of residential school students are receiving part of their education in public high schools, and that administrators retaining pupils in the residential environment for high school education plan no significant change in policy in the next five years. The advantages of both the residential and public high school systems as seen by the administrators of the residential schools are listed in the article. Dr. Buell calls for an objective study of the relative results of the two systems in regard to academic achievement and socialization.

There are two investigations planned in connection with the specialized phases of school curricula for blind children. Mr. Arthur Eisenstadt of the faculty of Rutgers University is planning a survey of existing speech practices and problems in the education of the blind. In addition, he anticipates utilizing an experimental approach in which objective ratings will be made of the speech of 50 blind children and a control group of fifty sighted children. All the children will be tested for intelligence and personal adjustment as well.

The other study relating to curriculum is being planned by Geraldine Haldeman, Director of Music of the Eldon Public Schools, Eldon, Missouri, and is on the subject of "musical education for the braille student in residential schools." The material in this thesis is being limited to the work which is being done for the totally blind and the partially-sighted who must depend, to a large extent, on braille notation for the study of music. The purpose is "to determine objectives, practices and procedures in the music education of the braille student," and the material will be gathered through reading, questionnaires and observation in a selected sample of residential schools.

Dr. Romaine P. Mackie is directing a study of the United States Office of Education on the "qualifications and preparation of teachers of exceptional children". Assisting Dr. Mackie in this survey are an Office of Education Policy Committee and a national committee of leaders from the different areas of special education as well as different geographical areas. "It is the plan of the study (1) to examine the standards of State and local school systems for teachers of exceptional children and to get opinion

data concerning their strengths and weaknesses; (2) to review the curricula of teacher-education institutions preparing teachers of exceptional children and to get opinion data concerning their strengths and weaknesses; (3) to evolve a statement of competencies needed by teachers in each of the special areas; (4) to develop suggestions which may be useful to State and local committees in setting up standards for special education personnel, and in developing and improving special education curricula in colleges and universities.

While it is true that in addition to the four studies described in this section, there is Greenberg's investigation which has been included in the section on adjustment studies, it is still surprising to find how little research is going on in the field of education of the blind. This is an area which until recent years had inspired more investigations than possibly any other. We can only speculate as to the reasons. One may be that there has been a shift in emphasis of interest from achievement in academic subjects to personality development. Formerly there were many studies on subjects like the best type of arithmetic slate, the reading rate of blind pupils compared with sighted ones, the comparative achievement in various academic subjects of these two general groups, analyses of braille reading in respect to such factors as hand dominance and relation of pressure to speed of reading, and similar projects. Answers have been offered to some of these questions. Donahue (5) has pointed out, for example, that it has been concluded from past investigations that the blind are found to be retarded academically in relation to chronological age but are average with reference to grade placement, and that braille reading as compared with Talking Book reading is slower at all age levels and results in poorer comprehension of material read except at the upper grade levels."

Certainly, with the increasing incidence of blindness in infants, the questions relating to the education of the blind will grow more, rather than less, critical. This is especially true with two general types of education, residential and public school, available to the blind. Whether the question is phrased, "Which is the better type of schooling?" or "Under what circumstances

should a child be sent to one or the other?", a research approach should assist an objective resolution of the issue. The Perkins Institution has been contemplating a research project of broad scope relating to this problem and it would seem probable that other studies will be getting under way in the near future.

v. Vocational Experiences of Blind Persons

With the support of an American Foundation for the Blind Research Fellowship, Mr. Douglas MacFarland, a doctoral candidate at New York University and counselor with the Delaware Commission for the Blind, is carrying out an investigation of blind and seeing persons employed at similiar jobs in industry. A variety of industries, located in several states, is being utilized, and a number of measures of aptitude and work performance are being employed. These include intelligence and motor skills tests, and ratings and records of production, attendance and safety.

MacFarland, reviewing the literature in the field, found "nothing that specifically pertained to the comparative work efficiency of blind and sighted workers in industry. Some writings were concerned with the employment of the blind in industry, but in these instances the definition of blindness was so construed that partial vision obviously played a part in the comparison and therefore would not have a bearing on the type of study proposed in this research." Discussing Kress' (11) study of the reactions of employers in the St. Louis shoe industry to the employment of the blind, MacFarland questions the validity of conclusions regarding work efficiency because of the dependence of the study on the opinions of the employers interviewed and the limited experience with blind workers of these employers. In regard to Fox's (6) investigation of the relative efficiency of totally blind and partially seeing workers in English workshops, MacFarland feels that "any conclusions regarding work efficiency drawn from this study might be questionable since the major part of the study was made in subsidized workshops and since no attempt regarding selective placement was indicated."

A second current study in this occupational area has to do with blind and partially sighted social work students. It is being conducted by the Study Group of Professional Social Workers in Agencies for the Blind. This group is composed of accredited social workers who are working with or on behalf of visually handicapped individuals. Four different groups of people are being contacted:

- 1) Present and former *students* who have had at least a quarter or semester of field work in a School of Social Work.
- 2) Field work departments of Schools of Social Work.
- 3) *Supervisors* of agencies who have supervised blind and partially seeing students.
- 4) *Administrators* of specialized and non-specialized agencies.

The views and experiences of these groups are being obtained through written questionnaires and personal interviews. In these, areas such as the following are being covered:

considerations in field work placements.
preparation of the supervisor and other staff members for placement of the student.
reactions of the supervisors, staff members, clients and other students toward the visually handicapped student.
arrangements to meet special needs of the student.
adjustment of the student to the field work setting.
placement after graduation.

A study involving the employment of blind and other physically handicapped persons is being carried out at the City College in New York City by Dr. Margaret Conden and Dr. Kathryn Maxfield. Of 72 physically handicapped alumni who attended the college during the period 1946 to 1952, 30 responded to a questionnaire concerning their vocational experiences. Five of the 30 are blind. It is recognized by the investigators that those individuals who have not responded may not have been as successful, as a group, and this will be taken into account when reporting the study, which is to be completed by the fall of 1953.

The most comprehensive study in this area is the one on blinded veterans being conducted by the Veterans Administration which

is described above in Table 1. The investigation has been included there rather than in this section because, while it surveys the vocational experience of some 2000 blind individuals, it covers not only work adjustment but the adjustment of the veterans generally.

VI. Cost-of-Living Study

The American Foundation for the Blind is conducting a study to obtain evidence about the degree and nature of differences in the cost-of-living of blind and seeing persons. Interviews have been conducted with a sample of approximately 65 families which have a blind member in a city which has been rated average with respect to several important economic variables. The detailed living expenses data which have been collected from these families are to be summarized and compared with results already obtained on a random sample of "sighted" families by the Bureau of Labor Statistics, whose interview schedule was employed for the blind population.

In 1944, the New York State Department of Social Welfare (14) published a description of a study by Fisher on the "Budgetary Needs of Employed Blind Persons in New York State." In this project, data was obtained on the social characteristics and living expenses of 83 employed blind persons and a comparison was made of the patterns of living expenditures of the 22 individuals in this group who lived alone with a national sample of single consumers living alone. This report stated in conclusion that "it is apparent that the employed blind present serious economic problems which should be given consideration in budgetary planning. The special financial needs of the blind include guide service, rent, clothing, transportation, medical and personal care. The needs of the totally blind are greater than those of the partially blind, while persons living alone incur larger expenditures than those who are members of a family group. Many of the blind included in this study have low incomes in addition to their handicaps, a situation which may have far-reaching social consequences."

Other studies have been made of the living costs of blindness,

but this investigation of Fisher's stands out as an objective attempt to obtain information in a field in which there has been a great deal of feeling and little study. The present investigation of the American Foundation for the Blind attempts to avoid some of the methodological weaknesses of the Fisher study in the following ways:

1. It covers not only employed blind, but a random sample of the blind population in a community which has been rated average in respect to such economic variables as climate and income level.
2. The blind population being surveyed and the sighted population with which it is being compared have both been interviewed on the basis of the same standard schedule of income and expenditures employed by the Bureau of Labor Statistics. The group of interviewers employed by the American Foundation for the Blind was characterized by a level of education and experience at least equal to that of those employed by the Bureau of Labor Statistics in its national survey, and were given a special course based on the Bureau's training program.
3. The family was used as the economic unit for both the blind and the sighted populations.
4. Because the data for the two populations was obtained a year apart, ratios are being employed based on changes in local and national price indices in order to equate the expenditures of the blind and sighted populations.

The results of the Foundation's survey will be reported in 1953.

VII. Safety of the Blind

Mr. H. Smith Shumway of the Division of Vocational Rehabilitation in Baltimore, Maryland, has surveyed by questionnaire a group of employed blind and sighted persons to discover the frequency of major or minor injuries in the following situations: (a) Home and home surroundings, (b) Travel and (c) At work. The results of the two groups are being compared. While the safety of the blind has been a subject of widespread interest, this is the first study of its kind.

VIII. Facial Vision

Dr. Karl Dallenbach and his co-workers are continuing their work in the area of obstacle perception, or facial vision. They have recently completed a study, soon to be published, of the acquisition of facial vision out of doors by blindfolded, sighted subjects and are presently working on the problem of the height and breadth of obstacles that are detected by blind and blindfolded sighted subjects.

Past experimental studies by Dolanski (4), Supa, Cotzin and Dallenbach (21), and Worchel and Dallenbach (24), have led to the conclusion that the obstacle sense is dependent upon auditory cues. However, Jerome and Proshansky (9), in a critical review of these experiments, express the point of view that methodological weaknesses in their research design make such a finding premature.

IX. Areas Not Being Investigated Currently

One area which is not investigated by any of the current research surveyed here is that of attitudes toward blind persons. Barker, Meyerson and others (1) summarized the studies on this subject made by Strong (20), Koehler (10), Rusalem (15), Schaefer (17), Merry (13), and Sommers (18). These investigations cover the attitudes held toward the blind by the following groups: the "general public", college instructors (towards blind students), staff members in schools for the blind, and parents of blind children. The results are on the whole favorable to blind persons, with the most uniformly positive attitudes being found among the college instructors. Sommers (18) concluded as a result of her study that the attitude of a parent toward the blindness of her child is determined by her own psychological makeup and personal adjustment. This may very well be the factor which accounts for individual differences in attitudes toward blind persons among the other groups studied. It would seem as if a promising line

of research in this area would be the relating of attitudes toward blindness with attitudes toward self.

A related area of investigation is the attitude of blind persons themselves toward blindness. Included among the current studies which may contribute data on this subject are those of Bauman, Jervis, Fitting and Cannon. One objective approach to this problem in the past is that of Voorhees (23), who distributed questionnaires to 750 totally blind persons and received 340 replies from men and women of all ages between 16 and 60 who had lost their sight at different ages. The replies received show generally favorable attitudes, with a majority of respondents believing, for example, that there are worse disabilities than blindness, that blindness had provided an increased understanding of people, that their work on a private competitive job should be as good as sighted persons', etc. It is probably reasonable to assume that respondents to the questionnaire had attitudes more positive than non-respondents, so the degree of representativeness of Voorhees' sample is left open to question. Another outstanding result of his study is the extent of individual differences in attitudes toward blindness which again, it may be hypothesized, could derive from the individual's self-concept, before or independent of his blindness.

A more recent study in this area is that of Sutton (22). His population included eleven boys, randomly selected from the age group, 16 to 21 years, at the local school for the blind. The investigator asked each subject to sort four groups of statements, based on (1) "How seeing people act toward me", (2) "How blind people act toward me", (3) "How I act toward seeing people" and (4) "How I act toward blind people". Sutton concluded that "totally blind adolescents of the type sampled do not, as a group, share attitudes toward the behavior of sighted persons which differ consistently from their attitude about the behavior of other blind persons. Although a stereotyping effect is found in the description of the behavior of the sighted, the stereotype is contained within the limits of that occurring in description of the behavior of other blind persons and of self-behavior."

There is a strong trend in current and past studies of the blind which leads to the important conclusion that, in regard to basic personality variables such as self-respect, feelings of security and realism of outlook, the process of adjustment in blind persons is not significantly different from that of people with sight. But especially in respect to people blind from early years, are there not necessarily differences in certain types of learnings, such as those which have to do with spatial concepts? The process of emotional development in blind and sighted people may be similar, but the area of intellectual growth may introduce important differences. Can we discover more clearly the nature of the images which blind people use to relate to the world esthetically and in an everyday way, which serve in the place of the visual images on which those of us with sight rely so much and from which we gain so much satisfaction? Perhaps in this area, too, the growing number of people blind from birth may stimulate research leading to fuller understanding of perception without vision.

x. Summary

A survey of current research in the field of blind persons has been presented. The investigations surveyed have been compared with and related to past research. The principal area of interest at the present time is in the area of personal adjustment and psychological development. Newer concepts and methods are being employed which are adding to the meaningfulness of research in this field. The increase in the number of preschool blind children due to the incidence of retrolental fibroplasia has been a spur to research and may throw light on the importance of parental attitudes in the psychological development of blind people generally. With more and more of these children growing up and attaining school age, we may see an increase, too, in the amount of research on the education of the blind which, at the present time, appears to be at a low level. Other areas of current research endeavor have been surveyed, and some fields in which no research is going on have been pointed out.

xI. Bibliography

1. Barker, R. G., Wright, Beatrice A., Meyerson, L. and Gonick, Mollie R. Somatopsychological Significance of Impaired Vision. Chapter 6 in *Adjustment to Physical Handicap and Illness: A Survey of the Social Psychology of Physique and Disability*. New York: Social Science Research Council Bulletin 55. Revised, 1953.
2. Biggs, Julia Ione. An Experiment in the Use of a Projective Technique with Blind Children. Unpublished M.A. Thesis, University of Texas, Austin, 1952.
3. Buell, C. Where should blind youth be educated? A survey. *Exceptional Children*, 1953, 19, 304-308.
4. Dolanski, W. Les Aveugles possèdent-ils le sens des obstacles? *Annee Psychol.*, 1930, 31.
5. Donahue, Wilma. Needs and Developments in Psychological Research for the Blind. Chap. 12 in *Psychological Diagnosis and Counseling of the Adult Blind*. New York: American Foundation for the Blind, 1947.
6. Fox, C. B. Industrial psychology applied to the blind. *National Institute of Industrial Psychology Journal*, 1931, 5, 334-343.
7. Gilmore, Florence. Preliminary Study of a Projective Test. Unpublished paper.
8. Harris, W. W. A bas relief projective technique. *J. Psychol.*, 1948, 26, 3-17.
9. Jerome, E. A. and Proshansky, H. Factors in the Assay and Use of Guidance Devices. Chap. 30 in *Blindness* edited by P. A. Zahl, Princeton, New Jersey: Princeton University Press, 1950.
10. Koehler, Marie E. The Personal Problems of the Blind Student in a University. Unpublished M. A. Thesis, University of Minnesota, Minneapolis, 1933.
11. Kress, Ruth. Reactions of Employers in the St. Louis Shoe Industry to Employment of the Blind. Unpublished M. A. Thesis, Washington University, St. Louis, 1948.
12. Lax, B. A Comparison of the Imaginative Productions of Congenitally Blind and Seeing Children to Structured Auditory Stimulation. Unpublished M. A. Thesis. The University of Texas, Austin, 1953.
13. Merry, R. V. *Problems in the Education of Visually Handicapped Children*. Harvard University Press, Cambridge, 1933.
14. New York Department of Social Welfare. *Budgetary Needs of Employed Blind Persons in New York State*. 1944.
15. Rusalem, H. The environmental supports of public attitudes toward the blind. *Outlook for the Blind*, 1950, 44, 277-288.

16. Sargent, Helen. *The Insight Test*. New York: Grune and Stratton, 1953.
17. Schaefer, Frances Mary. Social Traits of the Blind. Unpublished M. A. Thesis, Loyola University, Chicago, 1930.
18. Sommers, Vita Stein. *The Influence of Parental Attitudes and Social Environment on the Personality of the Adolescent Blind*. New York: American Foundation for the Blind, 1944.
19. Stone, D. R. A recorded auditory apperception test as a new projective technique. *J. Psychol.*, 1950, 29, 349-353.
20. Strong, E. K. *Changes in Interest with Age*. Stanford University Press, 1931.
21. Supa, M., Cotzin, M. and Dallenbach, K. M. Facial Vision: The perception of obstacles by the blind. *Amer. J. Psychol.*, 1944, 57, 133-183.
22. Sutton, J. W. An Exploratory Study of Social Perception of Blind Adolescent Males. Unpublished Ph.D. Dissertation. University of Texas, Austin, 1952.
23. Voorhees, A. L. Attitudes of the blind toward blindness. *American Association of Workers for the Blind*, 1945, 65-67.
24. Worchel, P. and Dallenbach, K. M. Facial vision: Perception of obstacles by the deaf-blind. *Amer. J. Psychol.*, 1947, 60, 502-553.

XII. List of Investigators

American Foundation for the Blind	Hayes, Samuel P.
Axline, Virginia	Jervis, Frederick
Ball, Thomas S.	Kenyon, Eunice
Bauman, Mary K.	Knudson, A. B. C.
Bernardoni, Louis C.	Lowenfeld, Berthold
Bledsoe, C. Warren	McAndrew, Helton
Braverman, Sydel	MacFarland, Douglas
Buell, Charles	Mackie, Romaine
Cannon, William M.	Maxfield, Kathryn E.
Chevigny, Hector	Meyerson, Lee
Conden, Margaret	Newland, T. Ernest
Cumming, Roger	Norris, Miriam
Dallenbach, Karl	Palacios, May Husni
Davis, Carl J.	Shumway, H. Smith
Eisenstadt, Arthur	Study Group of Professional So- cial Workers in Agencies for the Blind
Elonen, Anna S.	Sutton, J. W.
Fitting, Edward	United States Civil Service Com- mission
Gravitz, Leonard	Willerman, Emily
Greenberg, Herbert	Wilmer, Harry
Haldeman, Geraldine	
Halstead, Ward C.	

